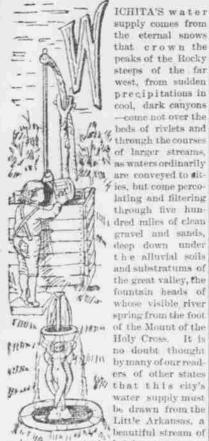
### THE WATER WORKS.

A SYSTEM NOT EQUALLED IN THE WEST.

Water Pure Mechanically and Chemical ly, and Can be Handled at the Rate of Twelve Million Gallons Daily Through Thirty Miles of Main.

waters of our prairies lie." erse the desert and then ye can fell t treasure exist in the cold, deep well; in despair on the white parched earth.

And then ye may recken what water is worth," our the bright lymph that Heaven itself lot fall apefulr bumper, let us toast them ail." ICHITA'S water



west, from sudden MAN are conveyed to dit-

WALLELLING OF THE WALLE OF THE WALL OF THE

ranges and stony slopes. Not one gaillon stack is of brick, seventy five feet high.

mated, they follow the under inclines of found in the boiler room, and the variety

the geological stratus which dip east and of pumps found ready for service at any

south in the direction of the Mississippi moment lend interest to the average citi

valley. This conlined and mighty under- zen. There are a half-dozen separate and

flow is reached by artesian wells in west-ern Kansas and eastern Colorado, at great supplies the city day and night and with

depths, but it is an underflow that very little demonstration about it is known

sprends out, and keeps so near the surface, as the Gaskill horrizontal compound con-

also that anywhere in this valley from the densing high duty pumping engine. One Mississippi river to the costern base of the may not fully understand why so much

in volume than the visible flow between the engine itself and in fact wonder how

the banks of the river, as has been demon-strated over and over again in irrigating such a short name. It occupies a space

experiments, in efforts of powerful pumps 20x30 feet and is twelve feet high. It rests

to lower the waters for the purpose of on a foundation that is about as solid as walling or curbing water-station wells, can be made of native or foreign stone.

the northwest confines of the city on an | | octiv safe and reliable speed and calls

rendering surface contamination impos-sible. It matters not how turbulent the two inches. The length of stroke is twenty-

and untouched. The pure and placid feet across. It is quite large enough to

island in the Great Arkansas, from beneath | for the five millions gallons daily.

The Wichita Water works are located on wer quite rapidly.

in a thousand of the waters of the rains with a flue thirty-six inches in diameter. and snows remain in sight, but sinking It is in the pump house that the surprise down among the bare, loose, and sollless and interest is in store for the visitor rocks and stones, down to depths unesti- The reserve force there is equal to that

the people of this city can congratulate themselves that no city of any land is more fortunate in these respects than Wichita, the details of which supply, together with other facts and personal agenies, we herewith present our readers; Few people in the city have anything

peaks of the Rocky steeps of the far ike a correct idea of the size and efficiency precipitations in of the water works system in the city. Very few have even visited the station. come not over the although a vist of that kind is not devoid of beds of rivlets and interest. The buildings are of brick and through the courses with slate covering. The pump room is of larger streams, forty by ninety feet with an ell twenty by as waters ordinarily twenty feet for office and reception room.
The boiler room adjoining on the north is fifty by sixty feet, adjourning which is the coal room forty by fifty. This gives room for about six car loads of coal. So far no through five hun-switch facilities have been secured for dred miles of clean prompt handling of coal but for some gravel and sands, time attention has been given this feature. deep down under The station being on the island and reachthe alluvial soils ed by a bridge accross the Little river and substratums of would call for a railroad bridge and a the great valley, the fountain heads of whose visible river spring from the foot

spring from the foot of the Mount of the Holy Cross. It is no doubt thought if the Holy Cross. It is no doubt thought if the Holy Cross. It is no doubt thought if the Holy Cross in each are sixty if the Holy Cross in each are sixty in the Holy Cross in each are sixty in the Holy Cross in each are sixty in the Holy Cross in the Holy Cross in the Holy Cross in the Holy Cross is likely to be consided in the Holy Cross in the by many of our read- two in number and three and a half luche by many order readers of the states to diameter. The fourth boiler is a Hazelton, set perpendicular, surrounded by a brick wall. This gives a boiler capacity for the plant of 315 horse. While the plant is supplied with four boilers two are quite able to supply steam, while the other two are held in reserve; also giving de la man bright waters, or an opportunity for repairs and careful at -from the Great Ar- tention. In fact every one of the boilers this is a mistake. While it is true the Arkansas river is the only stream that drains southeastern Colorado, yet it is equally of a fire which would call for an hour or true that the river contains but the small-est per cent of the waters precipitated plant being supplied with more than removing the water from the mains con-

scious of the sand and water under the sta-tion, and unconscious of the doubtful water supply visible at all times of the year and other mains, and also to keep the in the river it was proposed to resort to a system of securing clear and pure water In the placing of the similar to the one in use at New Orleans. well and run the water from the river into the well. Being smaller the pipe the more the work done muddy it would be forced through a sys bove ground and by this manner the tem of filters and in this way robbed of its mechanical impurities. This plan had been accepted and work in fact commenced before its impracticability was discovered, and the cheapness and efficincy offered by another plan observed. The drive well system was at last discovered and in this it was established there could be found an inexhaustable supply of water absolutely pure both mechanically and chemically.

The water supply as found today is gained from a system of drive wells; there being ninety-four wells four inches in diameter and forced down thirty-six feet. They reach down into a coarse gravel and down into the water about twenty-two feet deep. They are spread out over about two acres of ground and divided into five sections each connected by means of a valve to the main suction pipe and each of itself able to supply the city, but all are used unless some additions or work is be-ing done to one of the sections. It is not really known how much water could be secured from the system of wells but from suction resulting in atmospheric



W. W. ADAMS, ASSISTANT ENGINEER. sists in the pumps creating a vacuum removing the air pressure from the suction main and the water flows to the pumps when it is placed under pressure and sent out through the system for use. From this it will be seen that the water come from deep down in the ground from the coarse gravel, is not allowed to be exposed to the air and thus given a chance to ab sorb and impurities, and reached the con sumer absolutely pure.

So far there has been no difficulty ex perlenced in the water supply. At first the ordinary drive well was put down. After a year's service some were taken up to observe the action of the water and gravel on the wire over the small holes admitting the water. They were observed to be filling up by small degrees and in order to small degrees and in order to overcome any possible difficulty that might arise from this source a new plan was found and has been adopted and is



HAZELTON BOILER.

being complied with. The old fron pipes are being removed and a perforated pipe a liener, Col., foot in diameter and eight feet long is Dallas rex. pipes anywhere in this valley, within from five to twenty-five miles of the visible river lesslf, is drawn up from clean, cool, gravelly depths, beautiful in its crystal clear-ing depths, beautiful in the control of the visible river in this valley, within from five to twenty-five miles of the visible river last a modest capacity of 5,000,000 gallons in this way it is thought it will be many years before a change need be made. The company is making the change gradually not ever the first proper, and some of could hardly do less. Money judiciously in that the engine would never be lost. It has a modest capacity of 5,000,000 gallons per day, or almost double the demand for company is making the change gradually and in doing so thinks the supply is being a well into which the iron pipe reaches and in the progress which is being made in this way it is thought it will be many years before a change need be made. The company is making the change gradually and in doing so thinks the supply is being a well into which the iron pipe reaches and in the progress which is being made conomically expensed in needed public in this way it is thought it will be many years before a change need be made. The company is making the change gradually and in doing so thinks the supply is being a well into which the iron pipe reaches and in the progress which is being and economically expensed in needed public in this way it is thought it will be many years before a change need be made. The company is making the change gradually and in the company is a well into which the iron pipe reaches and in the original and in doing so thinks the supply is being a well into which the iron pipe reaches and in the progress which is being and economically expensed in unselected in any gradual and economically expensed in unselected in any gradual and economically expensed in the progress which is being and economically do les

supply or volume would be as impossible of exhaustion as would those of a river miles in width and hundreds of feet in much of a foot racing speed but it results in moving a large amount of which the supply is drawn. The waters of the visible river run around both sides. two of high pressure, sixteen inches in waters of the flowing river eight inches. The plunger is nineteen in rainy days become the flow-inches in diameter, while the fly wheel ing debths below remain undisturbed weighs eight tons, is of ivon and is nine

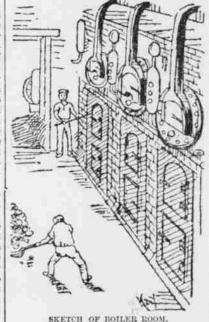
of the city to get out of the way of paving

In the placing of the sixteen inch main half the joints to It was proposed to construct a flume made are made above ground and by from the river leading to a large means of derricks the pipe is lowered in the trench and the connection made.



work done much more rapidly than by the old system of making all joints in the spigot and bell ends together and then two inches of the hemp-yarn is hammered in, followed by two inches of lead and then "caulked." All joints made above ground are carefully examined when placed into the trench to avoid any trouble from being

The company has just completed improvements on the Little river bridge which will set aside all fears and sensations about a water famine. The bridge supports, about one hundred feet of the supply main and seeing that it was unsafe, all the piling were replaced, and in fact more put in. The contract for constructing the bridge at first called for pile eighteen feet long and when they were removed the majority were observed to be only fourteen feet, disclosing the fact that the contractor had been a little short of fulfilling the contract. They were all taken out and piles 6 feet long put down, which makes an abolutely safe bridge. There is no mistake about it this time and there is a slim chance for any more superfine sensations about bridge going out. The pipe at this

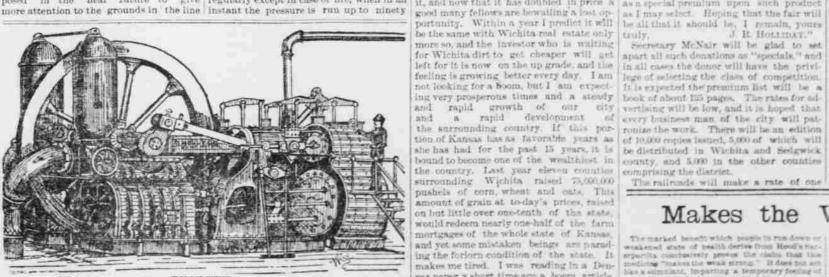


elevators, motors, by railroads, for street lived here in 1880, and I want to say that sprinkling, laundries, and in fact for al-the Wichita of today in all that goes to sprinkling, laundries, and in fact for action most every business to a certain extent.

During the winter months the daily consumption is 2,000,000, gallons and in the summer months that is increased to 3,000,000. In this connection it may be of the worder of the age. Remember that is considered that which it is the worder of the age. Remember that is also the worder of the great state of the less of the worder of the great state. interest to observe that Wichita only three years ago: and some of the best is supplied with water at a much cheaper informed and most successful business rate than any western or eastern city. The men of the east are beginning to size us up original franchise partially set a price and I have had occasion to to talk to some n many instances the company is furnish- them in the last month and find they are ng water cheaper than the rates designat- all of one mind and predict greater things ed. The following table contains some for us than we do for ourselves. What do very interesting reading for those interest-



tion call for five acres, covered with trees than in any other city. The almost level the city shown by the sale of her bouls. tion call for five acres, covered with trees and are partially cut up into walks, while territory covered by the system of mains, a large fountain adds to the effect and is a large fountain adds to the effect and is a no rock trenches and cheapness of supply how do you account for so little activity in of this kind has been presented. He acand are partially cut up into walks, while territory covered by the system of mains, favorite with the birds of the wooded island. One hydrant stands near the buildings ready for use in case of fire. A ed is College Hill, which forced the comresidence near by is occupied by Mr. pany to raise the domestic pressure from the forty pounds to sixty, which is maintained posed in the near future to give regularly except in case of fire, when in an it, and now that it has doubled in price a sample of the product in the near future to give regularly except in case of fire, when in an it, and now that it has doubled in price a sample of the product in price as an appeal product in price and price and product in price and p



put in the service at any moment. This the island, to be christened the "Water given, gives a total capacity of twelve million Works" park.

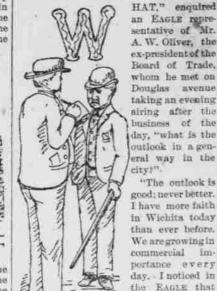
THE SYSTEM OF MAINS. tion in the founding building and in the results. In the construction of the new The hydrants are of the latest improve- and having confidence in the city did from the old time. See corrected time taafter health and presperity of any city, station the management came very near ments and so arranged that they can not

When the present company purchased The supply main which reaches from the tle over three years ago there were but station east on Central to Waco, where it twelve miles of main, all wooden main; the joins the net work of mains, is sixteen pumping capacity was about four million inches in diameter. It supplies over thirty gallons per day and water supply direct miles of pipe, none less than six inches in from the Little river, a stream thought to (Fort Scott route) taking effect today. The

FAITH AND WORKS.

PUBLIC IMPROVEMENTS AND PRI-VATE ENTERPRISE

A Prominent and Successful Busine Man Talks of the Past, Present and Future.



in Wichits today We are growing in commercial importance ever day, I noticed in last week \$200, 000,00 was paid out 163 = for live stock and grain, and yet that is only a commen ment, a beginning, the climax of which will result in one of the largest inland

cities in the west. In my opinion it is no longer a question of Wichita; it is simply a question of her surroundings, and to have faith in the country surrounding Wichita for a hundred miles in every direction you have only to go and see it right now. think no similar area in this country equals it, and there can be no question but Wich ita will keep pace with it. The same en-ergy and good judgment shown in the past needs only to be used, and what the result will be can be easily foretold. I can't see anything unfavorable in the outlook. There are some industries we ought to have and we are going to have them, we have made no mistakes so far and as fast as our people become convinced that we really need any special thing they set about getting it. Do you believe it is possible to build a large city here?

Well, that depends upon what you call a arge city. The best guide to an opinion on that question is comparison. Other restern cities have grown from 100,000 to 50,000 people upon less that we have, and our territory will soon, by the opening of the territory, be large enough to support more than one large city. No, I can't answer that question definitely, because the possibilities are too great, situated as we are, midway from east to west and north to south, whether we will only make a city of two or three hundred thousand or upon the central plan vie with Chicago.
What is the feeling of our people?

far as my observation goes it is good, it cannot well be otherwise. While ou business men have felt the stringency of noney matters in their business, they have not felt it to the extent of other chies, as illustrated by the few, if any, failures, among our merchants. In fact, I believe we have had less failures than any city o like size in the country. You have been here from the beginning

almost, and have seen the city in its differ ent stages of growth, what deductions de you draw? As you can observe by my remarks so far, I haven't anything unfavor able to say. Why, ten years ago you could count on the lingers of your two hands the number of men in this town who had point is being covered with a box arrangement filled with dirt, which protects the water from the chances of increasing intemperature.

The water going out in the wains is The water going out in the mains is each than the individual fortune of either ita? Well there are two or three import ant interests now that are receiving the attention of the board of trade but you know it's not the policy of that body to get too previous and go off half cocked and I will not go into detail, but such matters as milroud elevators, wholesale houses, etc., are receiving due attention and it looks now as improvements now going on? I believe we mittee on premium list had another meetcompany is making the change gradually and in doing so thinks the supply is being and in doing so thinks the supply is being made doubly sure and reliable.

The grounds of the company at the statement of the fact that it costs less to put in a plant here, possibly.

The grounds of the company at the statement of the statement o

be the same with Wichita real estate only truly.

J. R. HOLLIDAT."
more so, and the investor who is waiting Secretary McNair will be glad to set the country. Last year eleven counties comprising the district. surrounding Wichita raised 75,000,000 T pushels of corn, wheat and cats. This amount of grain at to-day's prices, raised on but little over one-tenth of the state. would redeem nearly one-half of the farm.

CHANGE OF TIME. A change of time on the Missouri Pacific

This week we will show many new goods sentative of Mr. A. W. Oliver, the and make some very low prices.

We received Saturday, but too late for sale, 2000 yards of choice ginghams, French styles, new designs and very pretty patterns, day, "what is the they are worth 18e, this lot at 12½c. It will eral way in the pay you to see them.

New outings in solid colors at 15 cents. White check nainsook at 71/2 cents, good than ever before. value at 15 cents.

> Misses' ribbed vests at 5c, cheap at 10c. Ladies' ribbed vests at 9c, extra cheap at 18c.

The best bargains of them all. Misses' hose at 5c, all colors. Every one that looks at them remarks, "how cheap."

Ladies' ribbed hose, all colors, at 5c. No. use sasing anything about them, see them and you will be satisfied with the price.

Mens' socks, extra good, at 5c. Hemp carpet at 15c.

Short lengths in scrims at 8 1-3c, worth 15 to 25 cents.

Extra quality of lace curtains at \$1.10, good value at \$2.00.

This is only a few of our bargains for this

CASH HENDERSON.

126 AND 128 DOUGLAS AVE. PANTS,

BREECHES, TROUSERS PANTALOONS.

By whatever name you wish to call them. Our stock is very complete, from 75 cents to \$10 per pair, all sizes.

If you don't live in the city send us a mail order, give waist measure and inseam, price, color, etc., and we will try to please you. Knee pants for children, 4 to 14 years, 25 cents to better grades.

# BITTING :: BROS

One-Price Clothiers, Hatters and Furnishers.

During the past week the Fair associa-

feeling is growing better every day. I am legs of selecting the class of competition not looking for a Boom, but I am expect— It is expected the pressing list will be a ing very prosperous times and a steady book of about his pages. The rates for ad-and rapid growth of our city vertising will be low, and it is hoped that and a rapid development of every business man of the city will patthe surrounding country. If this per-ronize the work. There will be an edition tion of Kansas has as Javorable years as of 10,000 copies issued, 5,000 of which will

The railroads will make a rate of one shink is of the typhus type.

fare for the round trip to the fair, which of itself is a feature tending to show how the railways look upon the project. Secthough 1890 would be a red letter year for tion has had many things to occur which retary McNair received advices from the care but stimulate their efforts. The com- Santa Fe yesterday that this action had been taken by the association at its last

> Letters from different localities in the reasing, and President Clover is confident of the successful outcome. He writes that Cowley county is preparing to cap-ture her share of the premiums.

PICNIC PARTY.

A number of the scholars of the scholars of the Carlton and Emports avenue schools mited yesterday in a piculo which was held in a shady grove on the banks of the Cowshin. They started about nine o'clock it. You know that corn sold last fall from credit, at such time and place as they may in the merning and did not reach home before the evening shadows began to gather. They all report a splendid time and speak in the highest terms of a dainty lunch which was served in the most de be the same with a vicinity of the same with the grant and the investor who is waiting secretary McNair will be grant and the privilege for it is now on the up grade, and the in all cases the denor will have the privilege for it is now on the up grade, and the in all cases the denor will have the privilege of a selecting the class of competition.

In games was part and approximately approxim lightfully rural fashion. A variety of games was much enjoyed and the ride party were: Misses Neille Jackson, Florence Carson, Floy Stanley, Alice Wells, Mead, Arthur Alexander, Charles Mathews and Silas Andrews.

she has had for the past 15 years, it is be distributed in Wishita and Sedgwick. The little son of J. R. Wenworth, divis-bound to become one of the wealthlest in county, and 5,000 in the other counties ion superintendent of the Frisco, is quite The little son of J. R. Wenworth, divis-

## Makes the Weak Strong

mortgages of the whole state of Kausas, and yet some mistaken beings are parading the foriorn condition of the state. It makes me tired. I was reading in a Denimal to the state of health derive from Health has to make me tired. I was reading in a Denimal to the state of the sta

## Hood's Sarsaparilla

diameter. They accommodate two hundred to such an extrain for St. Louis leaves at 1200 at noon, dred and ten fire hydrants, not one of them tent as to render the water impure. Aftern minutes earlier than heretefore, having less than six inch connection direct. The company recognized this fact. The other trains vary only a few minutes by C. I. HOOD 4 CO., Apatheratics, Lewell, Mass. by C. I. HOOD 4 CO., Apatheratics, Lewell, Mass.

100 Doses One Dollar | 100 Doses One Dollar

drink that impetuously springs from the unlidemand at present. faucets in our homes has never seen the In the water supply it is confidently aslight since it disappeared among the loose screed that there is not a plant to be found stones about the margins of the far away anywhers that gets a supply so cheap, and melting snow drifts until it again appears not a city that uses better water. In the consparking in its limpid transparency on struction of any plant there are peculiar courtables. As the purity and the volume conditions that exist which must be recogof supply of water is a primal considera- nized and fully utilized to secure the best

U. CRAMER, CHIEF ENGINEER.

Walker condensing pumps with a capacity of three million gallons; two Smith Vail & Co. pumps with an aggregate capacity of three million gallons; one duplex Dean steam pump with a one million capacity, and all are connected with the common suction line and discharge pipe, and one or all can be

This is considered

gallons daily, or about four times the act-

have considerable influence in regulating the speed and pressure and in its

the engineer is said to be a flattering success and likely with reasonable behavior to hold its job. In the regulation

department is also the automatic hydrostatic pressure regulator which performs.

the duties required at keeping the pressure

at a given point. The pump is surmounted by a beautiful guage board showing steam

and water pressure, vacuum and conden-

sers and revolution counter. It tells the

complete story of the work of the engine. The pump is connected with a twenty inch

In addition to the one mammoth pump

plant is supplied with two sets of

suction line and sixteen inch discharge.

of "beautifying" and the result will be pounds, and in the event of a very big fire nothing less than a beautiful little park on one hundred pounds or more could be

the system from the local company a lit-

Continued on Sixth Page.